MILITARY MEDICINE, 166, 10:898, 2001

Do Post-Traumatic Stress Disorder Symptoms Worsen during Trauma Focus Group Treatment?

Guarantor: Josef I. Ruzek, PhD
Contributors: Josef I. Ruzek, PhD*; Sherry J. Riney, LCSW*; Greg Leskin, PhD*; Kent D. Drescher, PhD*; David W. Foy, PhD†; Fred D. Gusman, MSW*

Male inpatient veterans with chronic combat-related post-traumatic stress disorder (PTSD) participated in trauma focus group treatment and were assessed immediately before group participation and after group completion at time of discharge. Standard measures of core PTSD symptoms, depression, and anxiety were used. In addition, changes in PTSD symptoms were tracked on a weekly basis for the duration of group participation. Results indicated that a single direct elicitation of war-related traumatic memories in a group setting was not associated with symptom worsening. However, veterans also did not show improvement in symptom severity. Possible reasons for this lack of impact are discussed along with implications for future treatment design and evaluation.

Introduction

Specialized post-traumatic stress disorder (PTSD) treatment facilities across the United States have been designed to serve the estimated 479,000 male Vietnam veterans and 610 female Vietnam theater veterans who continue to suffer from chronic PTSD,[1] in addition to veterans from other conflicts. Many of these treatment programs will implement some version of a group intervention known as trauma focus group treatment (TFGT), in which participants describe their traumatic war experiences and associated feelings and thoughts in considerable detail. Despite the widespread adoption of this potentially cost-effective approach in both inpatient and outpatient treatment settings, there is little empirical information available to evaluate its impact. Such data are important because there is concern among some clinicians that, rather than benefiting patients, TFGT will "open up" strong negative emotions and cause veterans' symptoms to worsen. There are some reports of complications resulting from the use of flooding procedures in the treatment of PTSD,[2-5] and rates of these complications during treatment of chronic combat-related PTSD have been estimated at 25 to 30%.[6] Consistent with such reports, some researchers have urged caution in using this approach with veterans and other PTSD populations, and preliminary guidelines for the selection of exposure treatments[7] have been outlined.

Guided therapeutic exposure to traumatic memories and stimuli is a core part of many treatment approaches to PTSD. Recently formulated treatment guidelines support the use of cognitive-behavioral exposure methods, placing them among the best-validated components of PTSD treatment.[8,9] The efficacy of these methods, in particular, has received strong empirical support in the context of treatment of rape-related PTSD.[10,11] The research literature suggests that, for many persons suffering from PTSD, guided exposure may be an important component of care at some time in the treatment process. It is important, therefore, to address the concerns and fears of clinicians regarding this procedure and to empirically investigate the likelihood of symptom worsening. Currently, cognitive-behavioral exposure therapies have relatively low utilization rates in Department of Veterans Affairs specialized outpatient PTSD services[12] and community-based veterans centers.[13] Therapists may be reluctant to use exposure methods for a variety of reasons, including lack of specialized training, lack of familiarity with the cognitive-behavioral treatment methods, and fear that such treatment will increase distress and exacerbate PTSD symptoms.

With regard to male combat veterans with PTSD, most of the empirical evidence supporting exposure treatments has been derived from examinations of individually administered exposure or flooding.[14-21] There are few empirical studies of the effectiveness of group-administered exposure therapy for combat-related PTSD or indeed for other populations suffering from PTSD. Therefore, at present, most trauma-centered therapeutic work is being delivered to veterans in a format—group treatment—for which little data are available to indicate outcomes or address concerns about symptom exacerbation.

Also of concern is the fact that TFGT targeted at combat-related PTSD differs in important ways from exposure therapy as delivered in validated cognitive-behavioral treatments. TFGT includes systematic discussion of premilitary familial experiences and stressors and survivors' past and current coping styles; thus, it attempts to provide a developmental perspective on traumatic events and their impact. This developmental perspective is held to be especially useful in helping to restore a sense of continuity between the pre- and post-trauma self, a goal that is not characteristic of most cognitive-behavioral treatments. TFGT also does not include systematic attention to treatment components that are central to most cognitive-behavioral approaches: stress management (e.g., relaxation training) and cognitive restructuring.[22,23] Perhaps most importantly, although stressing the importance of exposure to distressing combat-related memories, TFGT does not provide for repetitive exposure to personal trauma stimuli, the *sine qua non* of many cognitive-behavioral treatments.[10] Instead, it relies for effect on a single comprehensive account of the war traumas, supplemented by vicarious exposure to the traumatic experiences of other group members. The effects of such procedural changes are not known. However, there is some evidence that vicarious exposure may be less effective than direct exposure.[24] From a cognitive-

*Education and Clinical Laboratory Division, National Center for Post-Traumatic Stress Disorder, Veterans Administration Palo Alto Health Care System, Menlo Park, CA 94025.
†Graduate School of Education and Psychology, Pepperdine University, Pasadena, CA 91101.
This manuscript was received for review in December 2000 and was accepted for publication in February 2001.

behavioral theoretical perspective, the changes noted above may increase the chances of worsening after treatment because they reduce the very elements of treatment most likely to contain negative emotion and reduce arousal: stress management, cognitive restructuring, and repetitive exposure.

The purpose of the current study was to examine the impact of TFGT on core PTSD symptom reactivity in a treatment-resistant veteran population with chronic combat-related PTSD and extensive comorbid problems. We examined a naturally occurring series of cohorts of veterans receiving the treatment during a period of inpatient hospitalization for PTSD. A goal of the study was to examine rates of symptom "worsening" and to identify characteristics associated with negative outcomes. Another goal was to examine patterns of weekly PTSD symptom change during the process of treatment group participation to evaluate the impact of TFGT on acute symptom levels.

Methods

Subjects

Seventy-eight male veteran inpatients in a Department of Veterans Affairs specialized PTSD program, located at the National Center for Post-Traumatic Stress Disorder in Menlo Park, California, participated in the study. They were consecutive participants in combat-related trauma-focused groups routinely offered within the treatment program. All subjects received diagnoses of chronic combat-related PTSD at the time of hospital admission, according to Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R), criteria.[25] Diagnoses were based on structured clinical interviews using the Clinician-Administered PTSD Scale, version 1 (CAPS-1).[26] Sample demographic data are summarized in Table I.

All patients had previously completed a brief treatment program focusing on mutual support, interpersonal relationships and social/communication skills, anger management, stress management, cognitive therapy, and health/medication interventions; discussion and exploration of war-related traumatic events was explicitly avoided. After completion of that program, a second treatment phase involved participation in TFGT.

TABLE I

SAMPLE DEMOGRAPHIC DATA DESCRIBING 78 MALE INPATIENT VETERANS WITH CHRONIC COMBAT-RELATED PTSD RECEIVING TRAUMA FOCUS GROUP TREATMENT

Demographic Variable		Demographic Variable (%)	
Ethnicity		Marital status	
White	75%	Married	31%
African American	8%	Living with partner	3%
Hispanic	9%	Separated	17%
Pacific Islander	2%	Divorced	36%
Native American	6%	Widowed	1%
		Never married	11%
Branch of service		Current income	
Army	62%	$0–10,000	52%
Navy	8%	$10,001–20,000	25%
Air Force	2%	$20,001–30,000	11%
Marines	28%	$30,001–40,000	5%
		$40,001–50,000	6%
		$50,001+	1%
Military era			
Vietnam War	92%		
Korean War	4%		
Other	4%		

Intervention

The TFGT groups were made up of five to eight veterans, led by two co-therapists, and met two to three times per week for approximately 8 weeks. Each session lasted 2 to 3 hours. The goals of TFGT were to (1) prompt active description by trauma survivors of their personal traumatic events, with associated emotional arousal, (2) help patients identify distressing attitudes and interpretations of the events and their aftermath, (3) help them identify ways in which their pre-trauma identity and coping styles interacted with war experiences to influence their reactions to trauma, (4) promote adaptive change in trauma interpretations and coping responses, and (5) teach more effective self-management of PTSD symptoms. In week 1, members were provided with a rationale for TFGT participation, and they shared military histories, learned group ground rules, and viewed a film about Vietnam. In the following "exposure" weeks, each member in turn was allocated approximately 6 hours during which he described aspects of childhood development, military training experiences, war tour of duty, and combat-related traumatic events. In the final "wrap-up" week, group members were asked to identify what they had learned from the group experience.

Instruments

Combat Exposure Scale (CES)

The CES is composed of seven weighted, Likert scale items that quantify the extent of exposure to combat-related life threat, devastation, death, and dying. It is widely used and has shown excellent internal stability and test-retest reliability.[27]

CAPS-1

The CAPS-1 is a 30-item structured interview for assessing the frequency and severity of PTSD and related symptoms.[26] The interview allows for both dichotomous (PTSD vs. non-PTSD) and continuous measurement of PTSD status. Studies of the psychometric properties of the CAPS-1 have shown that it possesses excellent specificity and sensitivity.[28,29]

Los Angeles Symptom Checklist (LASC)

The LASC is composed of 43 items measuring a broad range of anxiety symptoms, including PTSD symptoms as defined in DSM-III-R. All three PTSD symptom clusters described in the DSM-III-R (and their constituent symptoms) are represented in the LASC. The instrument has been shown to possess good internal consistency and test-retest reliability and to demonstrate acceptable levels of convergent validity.[30]

Mississippi Scale for PTSD (MISS)

The MISS is a widely used 35-item measure of combat-related PTSD severity.[31] It uses a five-point Likert scale, and the total scores may range from 35 to 175. The scale has well-established psychometric characteristics with internal consistency α coefficients >0.90 and test-retest reliability of 0.97,[31] as well as good evidence of convergent validity.[32] Recent factor analysis has

TABLE II

COMPARISONS BETWEEN SCORES OBTAINED BEFORE AND AFTER TRAUMA FOCUS GROUP TREATMENT

	Pre-TFGT		Post-TFGT	
Measure	Mean	SD	Mean	SD
LASC total	82.0	25.6	72.5	28.7
LASC PTSD	40.5	11.7	36.0	12.6
LASC B	7.1	2.9	7.2	3.2
LASC C	15.6	5.0	12.8	5.6
LASC D	17.7	5.6	16.0	5.7
BAI	26.6	13.5	26.2	14.9
BDI	26.0	10.0	23.7	13.0
MISS	125.3	21.3	123.5	22.1

n = 78 for time 1; n = 58 for time 2.

identified four factors with items corresponding to reexperiencing, numbing, arousal, and self-persecution.[33]

Beck Depression Inventory (BDI)

The BDI is a 21-item inventory that measures depressed mood and vegetative symptoms of depression; total score ranges from 0 to 63.[34] It has a split-half reliability coefficient of 0.93; correlations with clinician ratings of depression range from 0.62 to 0.75.[35]

Beck Anxiety Inventory (BAI)

Like the BDI, the BAI is a 21-item scale whose total score ranges from 0 to 63.[36] This scale was designed to assess for clinically significant anxiety symptoms. Studies indicate that it has good internal consistency, test-retest reliability, and convergent and discriminant validity.[36,37]

Procedure

Subjects were assessed immediately before TFGT participation (pre-focus), and at 7 to 14 days after TFGT completion (post-focus). Instruments administered at both times included the CAPS-1, LASC, MISS, BDI, and BAI. The CES was administered at pre-focus only. In addition, subjects completed LASC questionnaires on a weekly basis for the duration of group participation.

Results

Changes

Table II presents descriptive statistics for all psychometric instruments and comparisons between scores obtained before and after TFGT. Results indicate that there were no significant changes in levels of PTSD, anxiety, or depression symptoms from before treatment to after treatment.

Weekly LASC Assessments during TFGT

The LASC was administered weekly during TFGT. t tests indicated no significant differences between symptom levels during week 1 and levels recorded during the week after individual exposure to personal trauma material (Table III).

In a final analysis, weekly LASC data were examined to determine what percentage of individual subjects showed either improvement or worsening in their PTSD severity scores. Yarnold[38] describes a statistical procedure derived from classical test theory that allows empirical testing of repeated-measures data for single subjects. This procedure has been used previously in two studies related to PTSD.[3,39] It involves converting an individual's raw data into ipsative z scores and estimating a test-retest reliability coefficient autocorrelation function (i.e., the correlation between all sequential pairs of scores for an individual). Finally, a critical difference score is calculated and compared with the difference among z scores for desired comparisons. Difference scores that exceed the critical difference are deemed significant at either the 0.05 or 0.01 level. This analysis was applied to data from each of the 25 subjects for whom weekly analyzable data were available. For each individual, data from week 1, the week after the individual's trauma exposure session, and the final session were compared using this technique. Results of this analysis indicate that when LASC scores after the first session were compared with scores after the focus group session, no patients showed significant worsening, 2 showed significant improvement, and 23 showed no change in scores. When first session scores were compared with those obtained after the last group session, no patients showed significantly worse scores, 4 demonstrated significant improvement, and 21 showed no change.

Discussion

Results of our investigation into the effects of TFGT indicate that few patients show a worsening of PTSD symptoms as a result of participation in this treatment. Mean levels of PTSD symptoms did not show significant change from before to after treatment, and symptom levels during the week after individual exposure to traumatic memories were not significantly different from levels during the initial week of group participation. These findings suggest that, for most veterans, TFGT is not associated with an "opening up" of memories that increases the severity of PTSD symptoms.

TABLE III

MEAN LASC SYMPTOM LEVELS DURING 7 WEEKS OF TRAUMA FOCUS GROUP TREATMENT

Session	LASC Total	LASC PTSD	LASC B	LASC C	LASC D
1	82.6 (24.3)	41.7 (10.5)	8.0 (2.7)	15.4 (4.7)	18.3 (4.6)
2	82.6 (23.3)	42.0 (9.9)	7.5 (2.6)	15.5 (4.5)	18.9 (4.2)
3	81.8 (24.2)	41.9 (10.3)	7.6 (2.7)	15.6 (4.5)	18.5 (4.3)
4	83.8 (19.7)	43.0 (8.6)	8.0 (2.3)	15.8 (4.1)	19.0 (4.3)
5	80.2 (22.8)	41.3 (9.7)	7.6 (2.6)	15.6 (4.2)	18.2 (4.6)
6	81.6 (20.9)	40.9 (8.4)	8.0 (2.6)	15.3 (4.1)	17.5 (3.6)
7	87.5 (19.4)	42.1 (7.6)	7.3 (2.6)	15.8 (3.6)	18.9 (3.5)

However, although levels of PTSD symptoms are not worsened as a result of this treatment, they are also not improved. It seems possible that some changes are being affected by participation that are not being adequately assessed by traditional symptom-focused outcome measures. Our patients are able to complete treatment under conditions of greatly heightened exposure to trauma cues, which in the natural environment would have precipitated symptom worsening, extreme efforts at avoidance, or social withdrawal and isolation. It will be useful in future investigations of trauma-focused treatment to include measurement of nonsymptom outcomes that are nonetheless clinically significant, such as the ability to tolerate symptoms and the level of interpersonal support seeking and trust. The possibility of benefits of this treatment is also suggested by the finding that when Vietnam veterans with chronic PTSD were asked to indicate, at the time of discharge, their preferences for and judgments of the efficacy of a variety of treatment elements found in a comprehensive inpatient treatment program, they rated treatment components that were high in Vietnam content as most effective.[40]

Given the chronicity of PTSD in this population, it is not surprising that our findings suggest that TFGT interventions as currently applied are having a minimal impact on PTSD, anxiety, and depression, as measured during inpatient hospitalization. A failure to improve PTSD symptomatology in Vietnam veterans with PTSD after comprehensive treatment has been reported by other investigators.[41-44] Hyer et al.[45] have described this group in terms of a "chronic traumatic personality" for whom "comorbidity, downward mobility, and long-term care are modal, necessitating a ratcheting down of care goals." Based on difficulties in changing chronic symptoms, some have speculated that treatment should avoid evoking traumatic memories in this population[44] and that methods involving abreaction may no longer be the most effective interventions.[46]

How do these reports of a lack of PTSD symptom improvement in comprehensive programs and in the present study relate to the consistently positive findings reported by studies of behavior therapy exposure methods?[47] As Rogers[48] noted, the methods of exposure used in most comprehensive programs apparently do not involve the kind of prolonged, repetitive, targeted, systematic review of traumatic experiences that takes place in direct exposure treatments. They also do not include other potentially important treatment elements often included in exposure treatment packages, such as stress management and cognitive restructuring. Thus, two competing hypotheses may account for negative findings regarding the impact of TFGT. Exposure treatment may be relatively less effective with the chronic combat-related veteran population, or failures to implement exposure in a manner consistent with previous cognitive-behavioral treatment research may limit the impact of trauma work in some settings.

Further research is necessary to determine if delivery of exposure-based treatments that are consistent with models used in past research will improve outcomes for veterans with chronic combat-related PTSD. More research is also necessary to determine factors that influence treatment provider selection of treatment methods, including treatment provider perceptions of trauma-focused treatment methods and the effectiveness of training in modifying perceptions and treatment practices. The current study suggests that one key provider perception, that trauma-focused treatment will exacerbate PTSD symptoms, may be unwarranted for most veterans.

References

1. Kulka RA, Schlenger WE, Fairbank JA, et al: Trauma and the Vietnam War Generation: Report of Findings from the National Vietnam Veterans Readjustment Study. New York, Brunner/Mazel, 1990.
2. Mueser KT, Butler RW: Auditory hallucinations in combat-related chronic posttraumatic stress disorder. Am J Psychiatry 1987; 144: 299–302.
3. Mueser KT, Yarnold PR, Foy DW: Statistical analysis for single-case designs: evaluating outcome of imaginal exposure treatment of chronic PTSD. Behavior Modification 1991; 15: 134–55.
4. Pitman RK, Altman B, Greenwald E, et al: Psychiatric complications during flooding therapy for posttraumatic stress disorder. J Clin Psychiatry 1991; 52: 17–20.
5. Foy DW, Kagan B, Haas B, McDermot C, Hammon M, Reno S: Evaluation of flooding therapy for combat-related PTSD: comparison between high and low dose groups. Presented at the International Society for Traumatic Stress Studies Annual Convention, San Antonio, TX, October 1993.
6. Foy DW, Kagan BL, McDermott C, Leskin GA, Sipprelle RC, Paz G: Practical parameters in the use of flooding for treating chronic PTSD. Clin Psychol Psychother 1996; 3: 169–75.
7. Litz BT, Blake DD, Gerardi RG, Keane TM: Decision making guidelines for the use of direct therapeutic exposure in the treatment of post-traumatic stress disorder. The Behavior Therapist 1990; 13: 91–3.
8. Foa EB, Davidson JRT, Frances AJ: Treatment of posttraumatic stress disorder (Expert Consensus Guideline Series). J Clin Psychiatry 1999; 60 (Suppl 10).
9. Foa EB, Keane TM, Friedman MJ: Effective Treatments for PTSD: Practice Guidelines from the International Society for Traumatic Stress Studies. New York, Guilford, 2000.
10. Foa EB, Rothbaum BO: Treating the Trauma of Rape: Cognitive-Behavioral Therapy for PTSD. New York, Guilford, 1998.
11. Resick PA, Schnicke MK: Cognitive Processing Therapy for Rape Victims: A Treatment Manual. Newbury Park, CA, Sage Publications, 1993.
12. Fontana A, Rosenheck R: The Long Journey Home. III. The Third Progress Report on the Specialized PTSD Programs. West Haven, CT, Department of Veterans Affairs Northeast Program Evaluation Center, 1993.
13. Hayman P, Moore R: Long term outcomes from Vet Center counseling: a national random survey. Poster presentation at the International Society for Traumatic Stress Studies Convention, Chicago, IL, November 1994.
14. Black JL, Keane TM: Implosive therapy in the treatment of combat-related fears in a World War II veteran. J Behav Ther Exp Psychiatry 1982; 13: 163–5.
15. Fairbank JA, Keane TM: Flooding for combat-related stress disorders: assessment of anxiety reduction across traumatic memories. Behav Ther 1982; 13: 499–510.
16. Keane TM, Kaloupek DG: Imaginal flooding in the treatment of post-traumatic stress disorder. J Consult Clin Psychol 1982; 50: 138–40.
17. Cooper NA, Clum GA: Imaginal flooding as a supplementary treatment for PTSD in combat veterans: a controlled study. Behav Ther 1989; 20: 381–91.
18. Keane TM, Fairbank JA, Caddell JM, Zimering RT: Implosive (flooding) therapy reduces symptoms of PTSD in Vietnam combat veterans. Behav Ther 1989; 20: 245–60.
19. Boudewyns PA, Hyer L, Woods MG, Harrison WR, McCranie E: PTSD among Vietnam veterans: an early look at treatment outcome using direct therapeutic exposure. Trauma Stress 1990; 3: 359–68.
20. Frueh BC, Turner SM, Beidel DC, Mirabella RF, Jones WJ: Trauma management therapy: a preliminary evaluation of a multicomponent behavioral treatment for chronic combat-related PTSD. Behav Res Ther 1996; 34: 533–43.
21. Glynn SM, Eth S, Randolph ET, et al: A test of behavioral family therapy to augment exposure for combat-related posttraumatic stress disorder. J Consult Clin Psychol 1999; 67: 243–51.
22. Foy DW: Treating PTSD: Cognitive-Behavioral Strategies. New York, Guilford, 1992.
23. Follette VM, Ruzek JI, Abueg FR: Cognitive-Behavioral Therapies for Trauma. New York, Guilford, 1998.
24. Woodward SH, Drescher KD, Murphy RT, et al: Heart rate during group flooding therapy for PTSD. Integrative Physiological and Behavioral Science 1997; 32: 19–30.
25. Diagnostic and Statistical Manual of Mental Disorders, Ed 3, Revised. Washington, DC, American Psychiatric Association, 1987.

26. Blake DD, Weathers F, Nagy LM, et al: A clinician rating scale for assessing current and lifetime PTSD: the CAPS-1. The Behavior Therapist 1991; 13: 187–8.
27. Keane TM, Fairbank JA, Caddell JM, Zimering RT, Taylor KL, Mora CA: Clinical evaluation of a measure to assess combat exposure. Psychological Assessment 1989; 1: 53–5.
28. Weathers F, Blake DD, Krinsley K, Haddad W, Huska J, Keane TM: The Clinician Administered PTSD Scale, diagnostic version (CAPS-1): description, use, and psychometric properties. Presented at the meeting of the International Society of Traumatic Stress Studies, Los Angeles, CA, October 1992.
29. Weathers F, Blake DD, Krinsley K, Haddad W, Huska J, Keane TM: The Clinician Administered PTSD Scale, diagnostic version (CAPS-1): reliability and construct validity. Presented at the meeting of the Association for the Advancement of Behavior Therapy, Boston, MA, November 1992.
30. King LA, King DW, Leskin G, Foy DW: The Los Angeles Symptom Checklist: a self-report measure of posttraumatic stress disorder. Assessment 1995; 2: 1–17.
31. Keane TM, Caddell JM, Taylor KL: Mississippi Scale for Combat-Related Posttraumatic Stress Disorder: three studies in reliability and validity. J Consult Clin Psychol 1988; 56: 85–90.
32. McFall ME, Smith DE, Mackay PW, Tarver DJ: Reliability and validity of Mississippi Scale for Combat-Related Posttraumatic Stress Disorder. Psychological Assessment 1990; 2: 114–21.
33. King LA, King DW: Latent structure of the Mississippi Scale for Combat-Related Post-Traumatic Stress Disorder: exploratory and higher-order confirmatory factor analyses. Assessment 1994; 1: 275–91.
34. Beck AT, Ward CH, Mendelsohn M, Mock J, Erbaugh J: An inventory for measuring depression. Arch Gen Psychiatry 1961; 4: 561–71.
35. Beck AT, Beamesderfer A: Assessment of depression: the depression inventory. In Psychological Measures in Pharmacology: Modern Problems in Pharmacopsychiatry, Vol 7, pp 151–69. Edited by Pichot P. Basel, Switzerland, Karger, 1974.
36. Beck AT, Epstein N, Brown G, Steer RA: An inventory for measuring clinical anxiety: psychometric properties. J Consult Clin Psychol 1988; 56: 893–7.
37. Fydrich T, Dowdall D, Chambless DL: Reliability and validity of the Beck Anxiety Inventory. J Anxiety Disord 1992; 6: 55–61.
38. Yarnold PR: Classical test theory methods for repeated-measures N = 1 research designs. Educational and Psychological Measurement 1988; 48: 913–9.
39. Nishith P, Hearst DE, Mueser KT, Foa EB: PTSD and major depression: methodological and treatment considerations in a single case design. Behav Ther 1995; 26: 319–35.
40. Johnson DR, Lubin H: Treatment preferences of Vietnam veterans with posttraumatic stress disorder. J Trauma Stress 1997; 10: 391–405.
41. Scurfield R, Kenderdine S, Pollard R: Inpatient treatment for war-related posttraumatic stress disorder: initial findings on a longer-term outcome study. J Trauma Stress 1990; 3: 185–202.
42. Hammerberg M, Silver S: Outcome of treatment for post-traumatic stress disorder in a primary care unit serving Vietnam veterans. J Trauma Stress 1994; 7: 195–216.
43. Fontana A, Rosenheck R: Improving the efficiency of resource utilization in outpatient treatment of post-traumatic stress disorder. Administration and Policy in Mental Health 1996; 23: 197–210.
44. Johnson DR, Rosenheck R, Fontana A, Lubin H, Charney D, Southwick S: Outcome of intensive inpatient treatment for combat-related posttraumatic stress disorder. Am J Psychiatry 1996; 153: 771–7.
45. Hyer L, McCranie EW, Peralme L: Psychotherapeutic treatment of chronic PTSD. PTSD Research Quarterly 1993; 4: 1–3.
46. Johnson DR, Feldman SC, Southwick SM, Charney DS: The concept of the second generation program in the treatment of post-traumatic stress disorder among Vietnam veterans. J Trauma Stress 1994; 7: 217–35.
47. Frueh BC, Turner SM, Beidel DC: Exposure therapy for combat-related PTSD: a critical review. Clin Psychol Rev 1995; 15: 799–817.
48. Rogers S: An alternative interpretation of "intensive" PTSD treatment failures. J Trauma Stress 1998; 11: 769–75.